

Prevalence and Determinants of Contraceptive Utilization Among Reproductive Age Women Living with HIV/AIDS in Addis Ababa, Ethiopia; A Cross Sectional Study Design

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Abstract

Background: The vast majority of people newly infected with HIV in sub-Saharan Africa are infected during unprotected heterosexual intercourse, including paid sex and vertical transmission of HIV to newborns and breastfed babies.

With a total projected population of 90.9 million currently (50.8% female), Ethiopia is among the most affected countries with HIV/AIDS in the world. The decisions on the contraceptive use made by people living with HIV/PLWHIV/ and their partners have lasting effects on the wellbeing of their families and the community at large. The aim of this study therefore, was to assess the magnitude and determinants of contraceptive utilization among HIV positive women aged 15 - 49 years in Addis Ababa, Ethiopia.

Methods: A cross sectional study was conducted among randomly selected reproductive age females living with HIV, who were attending the ART clinics in Addis Ababa, Ethiopia from April to June 2015.

This study was part of the larger study conducted during the above period on the magnitude and determinants of fertility desire and contraceptive utilizations among reproductive age people living with HIV/AIDS/PLWHA/ in Addis Ababa. Nevertheless, this specific study on determinants of contraceptive utilizations was focussed only on randomly selected female PLWHA. They were 313 among the total 442 PLWHA included in the above study. The socio-demographic characteristics, history of contraceptive utilization and sexual behaviour related data were collected by 12 trained nurses using pretested and self-administered questionnaire. The data were collected from ART clinics of two public hospitals and four health centers after getting informed consent from each systematically selected study participant. The collected data were first entered in to epi-info version 3.54 for cleaning and then analyses were done using SPSS version 20.0. Binary logistic regression analyses were carried out in order to explain the relationship of the outcome variable with socio-demographic and sexual behaviour related predictors.

Results: All the 313 HIV positive women of reproductive age group interviewed had responded voluntarily. From all the study subjects those who reported current use of at least one modern contraceptive method such as condom were only 134 (43.6%). Nevertheless, among the participants 252 (80.5%) had history of having sexual intercourse in previous year. Most importantly, among the study subjects 43 (13.8%) didn't disclose their HIV status to any one and 63 (20.1%) reported having two or more sexual partners in previous 12 months.

Moreover, those variables found to be predictors of contraceptive use among the participants during bivariate analyses or with statistical significance ($P < 0.05$) were entered in to the multivariable logistic regression model to control for possible confounders. Step wise logistic regression data analysis model was used. Accordingly, being married and currently with a partner (AOR = 4.27; 95% CI, 1.23 - 14.79), disclosure of HIV status particularly to the sexual partner (AOR = 4.46; 95% CI, 1.42 - 14.07) and condom used during the last sexual intercourse (AOR = 5.99; 95% CI, 2.85 - 12.59) were found to be significantly associated with contraceptive utilization among female PLWHA.

Conclusion: The findings of this cross-sectional study showed that a substantial proportion of PLWHA living in Addis Ababa, Ethiopia were not using contraceptives. Unprotected sexual intercourse with possible high rate of pregnancy as well as multiple sexual partnerships was observed among HIV positive women in the study area. Marital status, disclosure of HIV status and using condom during last sexual act were observed determinants of contraceptive use among reproductive age women living with HIV/AIDS. Thus, these findings provide research based and up-dated data for the need to more efforts in integrating the sexual and reproductive health services with anti-retroviral treatment clinics for better contraception utilization rate, counseling on risky sexual intercourse and safer conception in Ethiopia and other sub Saharan African countries.

Keywords: *Contraceptive Utilization; Sexual Behavior; People Living with HIV /PLWHIV/; ART Clinic; Ethiopia*

Abbreviations

AA: Addis Ababa; AIDS: Acquired Immune Deficiency Syndrome; ART: Antiretroviral Therapy; HIV: Human immunodeficiency Virus; IRB: Institutional Review Board; PLWHIA: People Living with HIV/AIDS; PMCTCT: Prevention of Mother to Child Transmission; SPHMMC: St Paul's Hospital Millennium Medical College

Introduction

There were about 36.7 million people living with HIV worldwide in 2015. The most affected countries with the pandemic were low-income countries, with little considerable progress so far in meeting the most basic health needs of their respective population [1,2]. HIV/AIDS affects people mostly in their reproductive and productive age group i.e. 25 - 49 years [3].

With a total projected population of 90.9 million (50.8% female), Ethiopia is among the most affected countries with HIV /AIDS in the world [4,5].

Importantly, HIV infection is linked with sexual and reproductive health, because it is not only transmitted by sexual contact but also more than half of the annual new infections globally are among women [6].

Studies show that the unprotected nature of sexual activity among people living with HIV was about 69% which indicates a potential for HIV transmission in the case of discordant couples [7,8].

In many areas of the world where HIV prevalence is high, rates of unintended pregnancy and unsafe abortion have also been shown to be high. Of all pregnancies, worldwide in 2008, 41% were reported as unintended and approximately 50% of these ended in abortion [9]. Moreover, among the 14,000 new HIV infections per day globally, 1600 are reported as through vertical transmission, i.e., mother to child transmission of HIV [10].

HIV positive women are more at risk of unplanned pregnancies [11]. Worldwide, two in every five pregnancies are unplanned [12]. Prevention of unplanned pregnancies in general and among the HIV infected women in particular is one of the crucial strategies to prevent mother to child transmission of HIV (PMTCT) [13]. It is also believed to be cost effective strategy that improves the quality of life of HIV positive women and decreases the number of HIV positive infants which in turn decreases the national maternal and child mortality rates [14,15].

Studies conducted among women of reproductive age in different countries of Africa also revealed that 10 - 65% of their last pregnancies were unplanned. For instance, 62% of women on ART and 59% of HIV positive women in South African and Kenya reported unplanned pregnancies, respectively [16-18].

In addition, unprotected heterosexual intercourse, including paid sex and vertical transmission of HIV to newborns are believed to be the risk factors for HIV transmission in sub-Saharan Africa countries like Kenya and Malawi [19]. Most women in sub-Saharan Africa are

particularly vulnerable to HIV because of the biological, political, economic and cultural reasons [20,21]. In this region women of reproductive age account for 58% of the people living with HIV [22]. In Ethiopia, more women (2.9%) than men (1.9%) are living with HIV [23].

A complex human expression of sexuality that includes feelings of arousal, pleasure, intimacy, social meanings attached to sexual behavior and reproduction is an important aspect of PLWHA's lives, as for any human beings [24]. Thus, PLWHA have a right to a satisfying and safe sex and reproductive life [24,25]. However, very little is known about the sexual and reproductive health needs of PLWHA in the context of ART in SSA settings.

Women living with HIV also have the right to fertility including making decisions on the number of children, spacing and timing of pregnancies and use of contraceptive methods [26]. Although, an unintended pregnancy can result from lack of contraceptive use or contraceptive failure, the family planning methods generally available globally can be used by HIV positive women as well with only few exceptions [27,28].

Even though, WHO guidelines provide options in specific cases where drug interactions may reduce the effectiveness of certain oral contraceptives among ART users, most hormonal contraceptives can be used without any adverse outcomes [28,29]. Spousal opposition, health concerns over ART interactions with some hormonal family planning methods and lack of access to family planning commodities have been reported as factors hindering contraceptive uptakes among female PLWHA [30].

Enabling women living with HIV to use contraception effectively is a cost-effective strategy that can decrease the rate of vertical transmission of HIV and maternal mortality related to unintended pregnancies [31-33].

The reasons and factors influencing their contraceptive utilization among HIV positive people may vary from the negative counterparts. Disclosure of HIV sero-status, discussion on fertility issue [34], marital status, age, open discussion about contraception with health workers and spouse [35,36], were found to be associated with contraception utilization among PLWHA. In addition, studies showed that contraceptive use may avert 19.7% of new HIV infections and 13.1% of deaths [37,38].

Among the contraceptive methods, condom, injectables and abstinence were reported to be the most preferred methods among HIV infected people [39,40]. However, information on informed choice of contraceptive methods, reasons for selection of methods and the influence of HAART on the contraceptive use of people entering HIV care is very limited.

Other studies also have reported that most women have preferred condom as method of pregnancy prevention. As the findings of studies reported, the most common type of contraceptive used among female PLWHA was condom [41,42]. To the contrary, a study in South Africa reported that most women were using short acting method, primarily injectable (70.2%) [43].

In general, in settings where HIV prevalence is high, management of sexual and reproductive health of HIV-infected people is critical to reduce HIV transmission and maternal mortality. But, contraceptive utilization and factors associated with it have not been well understood in resource limiting settings like Ethiopia.

Furthermore, understanding the contraceptive practices of HIV-infected and sexually active women would help providers to identify potential interventions for unmet needs. As a result, exploring the factors associated with contraceptive utilization among HIV infected and sexually active segment of the population in Ethiopia with high HIV prevalence could play key role in the public health response to the epidemic [44].

But evidences related to contraceptive use in the era of ART in Ethiopia are rare and out-dated. although most PLWHA are in their most reproductive and productive age, Therefore, the main aim of this study was to evaluate the magnitude and determinants of contraceptive utilization among HIV positive women aged 15 - 49 years in Addis Ababa, in order to fill the current research gap which in turn believed to have paramount importance for improving the sexual and reproductive health service of HIV positive people in the study area and across the country in general.

Materials and Methods

Study design and setting

A cross sectional study was conducted from April to June 2016 at the ART clinics of selected two public hospitals and four health centres from different sub-cities in Addis Ababa City Administration. Addis Ababa is located at 9-degree north latitude and 38-degree east longitude, in the range of 2200 - 2800 meters above sea-level. The projected population of Addis Ababa for the year 2014, according to the national census report of 2007 was 3, 197,000 (52 % females) [2,5].

Among 503,930 people tested in Addis Ababa for HIV till 2012/13, 19, 149 (3.8%) individuals were tested positive. This number was the highest compared to all regions in the country and that of the national (1.1%) [5,45].

Sampling Procedure

The source population for this study was all the patients attending ART clinics at various health institutions in Addis Ababa City during the above study period. However, the actual data collection was focussed on those ART clinics of public hospitals and health centers in the city.

As this study was part of the larger study on the magnitude and determinants of fertility desire and contraceptive utilizations in Addis Ababa, two public hospitals (St Paul's Hospital Millennium Medical College and Ras Desta Damtew) and four public health centers (Arada, Bole, District 3 and District 9) from various sub-cities were randomly selected. Then, in order to get representative samples among the HIV patients of reproductive age group who were attending respective ART clinics a random sampling technique with reasonable formulas of assumptions and 15% contingency was used. Hence, the total number of HIV patients selected was estimated by using the following single population proportion calculation formula: $n = (Z^2 \cdot p \cdot q) / d^2$. As 'n' was the sample size for the study, Z was the upper $\alpha/2$ point of standard normal distribution, where $\alpha = 0.05$, $Z \alpha/2 = 1.96$. As the findings of various previous studies revealed the contraceptive utilization rate and using condom among HIV positive people in sub-Saharan countries was about 48% [48-51].

Accordingly, the actual prevalence rate of contraceptive use among female PLWHA was estimated using $p = 0.48$ and $q = 0.52$ in the above sample size calculation formula.

The maximum allowed difference between the maximum likelihood estimate and the unknown population parameter denoted by 'd' was desired to be 0.05. Therefore, the sample size was calculated as stated in the above, and then 15 % contingency for the possible non-response rate was added. As a result, the calculated sample size was 442 proportionately and randomly selected HIV patients attending ART Clinics. Nonetheless, this study that assessed prevalence and determinants of contraceptive utilizations has focused only on female PLWHIV which were 313 or 71.0% of the total sample size calculated as above. Accordingly, HIV positive patients who were male in gender, age below 15 years during the study period, severely ill and not able to participate in the study were excluded from this study.

Data Collection and Quality control

Data were collected in 2016 using pre-tested, structured and interviewer administered questionnaire. The data were collected from 313 HIV positive female patients who were 15 - 49 years old and also who provided written consents to participate in the study.

In order to ensure data quality, various actions were taken at different levels. Before the actual administration of the intended questionnaires, they were edited and pre-tested. In addition, the required training was conducted for data collectors and supervisors by the PI and his co researchers. The data collections were carried out by 12 BSc graduate nurses, two supervisors, who had BSc and above in health sciences /co-researchers/ and the Principal Investigator.

The developed standard questionnaires originally in English was translated into Amharic and then back to English in order to check for consistency as well to make effective pre-tests and modifications as needed.

Moreover, prior to the main fieldwork, the pre-testing of the data collection instruments was done using HIV positive patients from public health facilities which were not included in the actual study. The characteristics of health facilities that were used for pre-testing had similar characteristics to health facilities where the study was applied. The pre-test was helpful to identify problems and omissions as well as checking time spent in responding. Pre-testing of instruments was aimed at improving the precision, reliability, and cross-cultural validity of data. Following the pre-testing of study instruments, ambiguous or unclear questions were either rephrased or removed.

At the field level, the filled questionnaire or data collection forms were checked first by the data collectors themselves and then by their respective supervisors on a daily basis. Then after, the principal investigator had cross-checked the filled and collected questionnaire randomly for their completeness and consistency on daily bases.

Finally, at the data entry level, checking for invalid codes, missing values, inconsistency of records and duplicated entries were done carefully with due emphasis on the expected quality of data.

Ethical Considerations

As HIV positive populations attending ART clinics of public health facilities for treatment and care were the study subjects, due considerations were given for the ethical principles of respect, beneficence, and justice during all the data collection processes.

Moreover, all the data of this study were handled with confidentiality and anonymity and an ethical clearance was obtained prior to this study from the IRB of the St Paul's Hospital Millennium Medical College/SPHMMC/. Then, official letters of co-operation were written from the SPHMMC to all the targeted health facilities of the data collection.

Finally, the applications of the general principles of ethics to this study had led to the consideration of the requirements for volunteer and informed consent of the study subjects. They were done after providing full information to the subjects about the study objectives and their right to participate or not which was crucial in the whole process of the study.

Data Management and Statistical Analysis

All the collected data were entered into a computer with EPI Info software version 3.5.4 first, and then analyses were done using the SPSS software program version 20.0. Different appropriate statistical methods were employed, including frequency distribution, percentages, proportions; odds ratios and adjusted odds ratio with 95% confidence intervals were calculated. Chi-square tests, bivariate and multivariate logistics regressions methods were used for the test of the association between the outcome and independent variables. Assumptions behind all procedures were checked.

The variables in multivariate analyses were chosen based on existing theoretical knowledge on the variables and statistical significance found during bivariate analyses. Accordingly, the P-values less than 0.05 were considered as statistically significant.

Results and Discussion

Socio-demographic characteristics of the study participants

All the 313 HIV positive women of reproductive age group interviewed had responded voluntarily. Most of the study participants were in the age group of 25 - 49 years 166 (53.0%) and only 17 (5.4%) were in age group of 15 - 24 years. Over half of the participants belong to Amhara ethnic group 172 (55.0%) and over three-fourth of the total were Orthodox Christian religion followers 248 (79.2%). As to the marital status is considered 139 (44.4%), 119 (38.0%) and 55 (17.6%) were married, divorced and widowed, and single, respectively. In addition, slightly lower than half or 142 (45.7%) of the study subjects were with secondary and above level of education (Table 1).

Variables	Frequency	%
Age category		
15 - 24	17	5.4
25 - 34	166	53.0
35 and above	130	41.5
Total	313	100.0
Ethnicity		
Amhara	172	55.0
Oromo	79	25.2
Others	62	19.8
Religion		
Orthodox Christian	248	79.2
Others	65	20.8
Education		
Illiterate	43	13.8
Primary School	126	40.5
Secondary and above	142	45.7
Marital Status		
Single	55	17.6
Married	139	44.4
Divorced and Widowed	119	38.0

Table 1: Distribution of Socio-demographic Characteristics of study participants, in Addis Ababa, Ethiopia; 2016, N = 313.

Sexual, Clinical and reproductive characteristics of study participants

Of 313 respondents 298 (95.2%) ever had sexual intercourse and 252 (80.5%) had history of having sexual intercourse in previous 12 months of the study period; 268 (85.6%) disclosed their HIV status to their respective sexual partners, parents or friends. But 43 (13.7%) didn't disclose themselves to any one as HIV positive patient; 191 (61.0%) and 63 (20.1%) reported that they had one and two or more sexual partners in previous 12 months, respectively. Nevertheless, those who responded as that they had sexual partners during the study period were 162 (51.8%). Of those whose partners' blood was tested for HIV were 156 (88.1%), reported as HIV positive were 113 (65.3%) and the rest were either negative or not understood by their respective partners. Among the participants those who self-reported that their general health statuses were very good, good and fair were 156 (50.3%), 75 (24.2%) and 79 (25.5%), respectively (Table 2).

From study subjects those who reported using at least one modern contraceptive methods during the study period were 134 (43.6%) and the remaining 173 (56.4%) didn't use; regarding type of contraceptive they were using 61 (46.6%), 47 (35.9%) and 23 (17.6%) responded as male condom, injectables or in plants and oral pills or IUD, respectively. The main reasons given by the female participants for not using contraceptives during the study period were 140 (44.7%) on the abstinences, 18 (5.8%) pregnant or wanted to be pregnant and 10 (3.2%) other reasons (Table 2).

In contrast, among the study participants 252 (80.5%) had history of having sexual intercourse in previous 12 months of the study period, 216 (69.0%) had good knowledge about the importance of prevention of mother to child transmission (PMTCT) and equal number or 216 (69.0%) reported as their attitude towards PMTCT service was positive. Moreover, among all the study participants 164 (52.4%) reported that they had desire for fertility or children, 128 (40.9%) had no desire or were not yet decided (Table 2).

Variable	Frequency	Percentage (%)
Ever had sexual intercourse		
Yes	298	95.2
No	14	4.5
Had sex in the previous 12 months		
Yes	252	80.5
NO	45	14.4
How many sexual partners did you have in previous 12 months?		
One	191	61.0
Two or more	63	20.1
Do you have a sexual partner currently?		
Yes	162	51.8
No	141	42.5
Did you disclose your HIV status to your partner/s?		
Yes	268	85.6
No	43	13.8
Did you use condom during your last sex?		
Yes	143	48.3
No	153	51.7
Currently using any type of modern contraceptive		
Yes	134	43.6
No	173	55.3
Type of contraceptive currently used		
Male condom	61	19.5
Injectables and implants	47	15.0
Pills,IUDs and others	23	7.3
Reasons for not users of contraceptives		
On the abstinence	140	44.7
Pregnant or wanted to be pregnant	18	5.8
All other reasons	10	3.2
Your current health status		
Very good	156	49.8
Good	75	24.0
Fair or bad	79	25.2
Knowledge of PMTCT		
Knowledgeable	216	69.0
Not knowledgeable	95	30.4
Attitude towards PMTCT		
Positive	216	69.0
Negative	97	31.0

Being on ART increased your fertility desire		
Yes	164	52.4
No	128	40.9

Table 2: Sexual, Clinical and Contraceptive use of female PLWHA in Addis Ababa; 2016; N = 313.

Factors associated with contraceptive utilizations among Female PLWHIV

Some socio-demographic and sexual behaviour related factors were identified as possible predictors using bivariate and multivariate logistic regression models. Accordingly, being orthodox religion follower (OR = 2.19; 95% CI, 1.21 - 3.96), being married and currently with partner (OR = 3.2; 95% CI, 1.52-6.76) and being divorced or widowed (OR = 0.25; 95% CI, 0.13 - 0.49), disclosure of HIV status (OR = 2.19; 95% CI, 1.21 - 3.96), having sexual practice in previous year (OR = 15.44; 95% CI, 4.66 - 51.13), and using condom during last sexual intercourse (OR = 2.04; 95% CI, 1.0 - 4.18), were found to be associated with contraceptive utilization among reproductive age women living with HIV. However, among the variables entered in to the binary logistic regression model age, ethnicity, education, current health status, sexual partner being tested for HIV, HIV status of the partner and knowledge of prevention of mother to child transmission /PMTCT/ didn't show statistically significant association with contraceptive utilizations (Table 3).

Variable	Currently use of any type of modern contraceptive		Unadjusted OR (95%CI)
	Yes (%)	No (%)	
Age category			
15-24	8(47.1)	9(52.9)	1
25-34	78(48.1)	84(51.9)	0.68(0.24-1.87)
35 Years and above	48(37.5)	80(62.5)	0.65(0.40-1.03)
Religion			
Orthodox Christian	115(47.5)	127(52.5)	2.19(1.21-3.96)
All others	19(29.2)	46(70.8)	1
Ethnicity			
Amhara	79(47.3)	88(52.7)	1.0
Oromo	33(42.3)	45(57.7)	0.61(0.34-1.12)
All others	22(35.5)	40(64.5)	0.75(0.38-1.49)
Education			
Illiterate	17(42.5)	23(57.5)	0.90(0.44-1.84%)
Primary school	60(48.0)	65(52.0)	0.72(0.44-1.18)
Secondary and above	56(40.0)	84(60.0)	1.0
Marital Status			
Single	20(37.0)	34(63.0)	1.0
Married	96(70.1)	41(29.9)	3.2(1.52-6.76)
Divorced and Widowed	18(15)	98(84.5)	0.25(0.13-0.49)
Current Health Status			
Very good	67(43.5)	87(56.5)	1.1(0.62-1.88)
Good	31(42.5)	42(57.5)	1.13(0.59-2.15)

Fair and bad	35(45.5)	42(54.5%)	1.0
Is your Current sexual partner tested for HIV?			
Yes	110(71.0)	45(29.0)	0.92(0.30-2.76)
No	13(65.1)	7(35.0)	1.0
Have you had sex in previous 12 months?			
Yes	129(52.4)	117(47.6)	15.44 (4.66-51.13)
No	3(6.7)	42(93.3)	1.0
Did you disclose your HIV status to any one?			
Yes	121(45.8)	143(54.2)	2.04(1.0-4.18)
No	12(29.3)	29(70.7)	1.0
To whom did you disclose your HIV status first?			
Sexual partner	92(67.6)	44(32.4)	1.0
Parents	12(19.7)	49(80.3)	0.03(0.17-17.65)
Close friends	7(13.2)	46(86.8)	0.62(0.23-1.72)
Did you use condom during your last sex?			
Yes	100(70.4)	42(29.6)	9.37(5.46- 16.5)
No	30(20.3)	118(79.7)	1.0
Knowledge of PMTCT			
Knowledgeable	93(43.3)	122(56.7)	1.0
Not knowledgeable	39(43.3)	51(56.7)	1.0(0.61-1.65)
Your current partner's HIV Status?			
Positive	80(71.4%)	32(28.6)	0.82(0.38-1.76)
Negative	27(67.5%)	13(32.5)	1.0
Do you have desire for fertility currently			
Yes	68(42.8)	91(57.2)	1.06(0.66-1.69)
No	56(44.1)	71(55.9)	1.0

Table 3: Binary Logistic Regression analysis of Factors associated with Current contraceptive utilization among female PLWHA of reproductive age in Addis Ababa (N = 313); 2016.

Furthermore, those variables showed statistical significance ($P < 0.05$) entered in to the multivariable logistic regression model to control for possible confounders and identify the independent contribution for each predictor. Step wise logistic regression data analysis model was used. As a result, marital status i.e, married and currently with a partner (AOR = 4.27; 95% CI, 1.23 - 14.79), disclosure of HIV status particularly to the sexual partner (AOR = 4.46; 95% CI, 1.42 - 14.07) and condom used during the last sexual intercourse are found to be significantly associated with contraceptive utilization among female PLWHA in their most reproductive and productive age group (Table 4).

Variable	Currently using any type of modern contraceptive		Unadjusted OR (95%CI)	AOR(95%CI)
	Yes	No		
Religion				
Orthodox Christian	115(47.5%)	127(52.5%)	2.19(1.21-3.96)	1.0
All others	19(29.2%)	46(70.8%)	1	2.17(0.76-6.02)
Marital Status				
Single	20(37.0%)	34(63.0%)	1.0	1.0
Married	96(70.1%)	41(29.9%)	3.2(1.52-6.76)	4.27(1.23-14.79)
Divorced and Widowed	18(15.5%)	98(84.5%)	0.25(0.13-0.49)	0.67(0.21-2.21)
Have you had sex in previous 12 months?				
Yes	129(97.7%)	117(73.6%)	15.44 (4.66-51.13)	4.25(0.75-24.14)
No	3(2.3%)	42(26.4%)	1.0	
Did you disclose your HIV status to any one?				
Yes	121(91.0%)	143(83.1%)	1.0	
No	12(9.0%)	29(16.9%)	2.04(1.0-4.18)	
To whom did you disclose your HIV status?				
Sexual partner	92(82.9%)	44(31.7%)	1.0	4.46(1.42-14.07)
Parents	12(10.8%)	49(35.3%)	0.03(0.17-17.65)	1.97(0.70-5.56)
Close friends	7(13.2%)	46(86.8%)	0.62(0.23-1.72)	1.0
Did you use condom during your last sex?				
Yes	100(76.9%)	42(26.2%)	1.0	5.99(2.85-12.59)
No	30(23.1%)	118(73.8%)	9.37(5.46- 16.5)	1.0

Table 4: Multivariable logistic regression analysis for factors associated with contraceptive utilization among female PLWHA of reproductive age; Addis Ababa, 2016.

Discussion

This health facility based cross sectional study was conducted among reproductive age women living with HIV/AIDS in Addis Ababa, Ethiopia. The high proportions of age category above 35 followed by 25-34 years were consistent with the data of adult prevalence of HIV/AIDS globally and in Ethiopia [3,5,13,23,49]. As the findings of the study showed majority of the PLWHA have secondary and above education. This finding also was in agreement with the country progress report of 2014 on HIV/AIDS that stated high risk sexual behaviours among University and High school students. However, this finding is slightly higher than the findings of a similar study that was conducted in Addis Ababa previously among female PLWHA. The observed difference could be due to the variation in time line [51-53].

Among the 313 female PLWHIV of reproductive age the proportion of contraceptive utilization rate was 43.6% with 95% CI 39.2% - 48.7%. But the prevalence of fertility desire was 56.2% with 95%CI of 49.8% - 62.0%. This prevalence was higher than a study conducted in Fitch town, Ethiopia and Cape town, South Africa but lower than the findings of EDHS 2011 and that of a study from Nigeria, that were 39.1%, 51.0% 63.0% and 63.3%, respectively [54-56]. This may be due to different socio-demographic characteristics of the populations and cultural difference towards having large family size and fertility rate.

Moreover, regarding the self-reported health conditions of PLWHIA during the study period, about three-fourth of the respondents were in good and very good health statuses after being on ART. This finding was also in line with some previous studies that reported

being on ART has reduced HIV/AIDS-related morbidity and mortality, new infections, and substantially improved the quality of life of people living with AIDS (PLWHIA) [57,58].

The main factors associated with contraceptive utilization among women living with HIV were religion being Orthodox, marital status, having sexual intercourse during previous year, disclosing ones HIV status to any one, disclosing HIV status to a partner and condom used during last sex.

Although the above predictors have shown statistically significant associations with contraceptive utilization among female PLWHA during bivariate analyses, religion and having sex in previous 12 months had lost their observed statistical significance during multivariable analysis (Table 4).

The number of HIV positive women self-reported as they were sexually active in previous 12 months was 354 (85.1%). Among those 233 (55.8%) had used condom during their last sex. Of all the study subjects 382 (87.0%) disclosed their HIV status to their respective sexual partner/s. But nearly half of the respondents or 208 (47.2%) had sexual partners during the study period.

As the findings of this study showed the prevalence of contraceptive use among female study participants (n = 313) was 43.6% with 95% CI of 37.3 - 48.9%. Although it was higher than the findings of a similar study conducted in Malawi (40%) it was lower than the findings of the study from the neighboring country Kenya (54%) [19].

Those study subjects in marriage tie were about four times more likely to use contraceptives compared to those single or divorced and widowed. This finding was also in line with the findings of previous similar studies reported from Gondar, Ethiopia and Uganda [36,59]. This could be explained as those in marriage bondage during the study period were more likely to have sex and open discussions on sexual and reproductive issues with their partners.

In addition, the female PLWHA who disclosed their HIV status to their respective sexual partners were about four times more likely to use contraceptives compared to their counters. Disclosure of HIV sero-status to a partner might have played positive role in using contraceptives among females as it could result in more discussion openly on their desired number of children than others. It agrees with the finding of a study from another region in Ethiopia [51].

Moreover, study participants who used condom during their last sexual intercourse were about six times more likely to use contraceptives as single or dual methods of protection. As previous studies from different parts of African countries show among PLWHA who ever used at least one contraceptive method, condom, injectables and abstinence were reported to be the most frequently used methods [39,40]. Furthermore, our finding agrees with the findings of previous studies that had reported condom as the most preferred method of contraceptive [51,60]. However, it disagrees with a study in South Africa that reported the majority of the women were using short acting contraceptive methods, primarily injectable (70.2%) [54].

Most surprisingly, in this study unlike some previous studies conducted in Ethiopia and elsewhere education status of female PLWHIA didn't show statistically significant association with contraceptive utilization [54,61,62].

Limitation

The authors believe that the cross-sectional nature of this study may make the causal and effect relationship of contraceptive use among female PLWHA difficult to interpret. Moreover, since there were some sexual behavior related sensitive topics to be addressed social desirability bias might have occurred from the participant side during responding to some questions.

Conclusion

Conclusion should reflect and elucidate how the results correspond to the study presented and provide a concise explanation of the allegation of the findings.

The findings of this cross-sectional study revealed that a substantial proportion of HIV positive women living in Addis Ababa, Ethiopia were not using contraceptives. The practice of unprotected sexual intercourse with possible high rate of pregnancy as well as multiple sexual partnerships were observed among HIV positive reproductive age women in the study area. Contraceptive utilizations among HIV positive females in the study area were more determined by marital status, disclosure of HIV status and condom used during last sexual act.

Thus, these findings provide research based and up-dated data for the need to more efforts in integrating the sexual and reproductive health services with anti-retroviral treatment clinics for better contraception utilization rate, counseling on risky sexual intercourse and safer conception in Ethiopia and other sub Saharan African countries.

Last, since this study was limited to exploring the magnitude and determinants of contraceptive utilizations among female PLWHA in the capital city, Addis Ababa only, there is a need for large scale or nationwide studies with more representative sample size to consolidate much needed empirical evidence on determinants of contraceptive utilization rate among PLWHIV.

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Conflict of Interest

The author declare that there is no competing interests.

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